CLAIMS

1. A method for producing large populations of neural cells which method comprises undertaking the following steps in the following order

a) enhancing the replication of a first undifferentiated neural cell, or neural cell precursor cell, or precursor stem cell,

b) exposing said replicated neural cells either to a region, or part thereof, of the nervous system, or an extract thereof including homologues and analogues thereof, from which said first neural cell came; and

c) allowing differentiation of said cells to produce fully differentiated active neural cells.

2. A method according to Claim 1 wherein the environment from which the first nerve cell came is any region of the central nervous system.

3. A method according to Claim 2 wherein said environment is an environment at, adjacent, or functionally related to the natural location in the central nervous system from which the first undifferentiated nerve cell is derived.

4. A method according to Claim 3 wherein said environment is a mitotic environment.

5. A method according to any preceding claim wherein said nerve cells

are exposed to a soluble extract from said environment.

6. A method according to any preceding claim wherein said environment is from the same species as said first undifferentiated nerve cell.

7. A method according to Claims 1 to 5 wherein said environment is from a different species to that of said first undifferentiated nerve cell.

8. A method according to any preceding claim wherein enhancing the replication is provided by use of a replication agent such as a growth factor.

9. A method according to Claims 1 to 7 wherein enhancing replication is provided by an immortalising agent.

10. A method according to Claim 9 wherein said agent is an oncogene.

11. A method according to Claim 10 wherein said oncogene includes, or has associated therewith, a control means.

12. A method according to Claim 11 wherein said control means is responsive to culture or environmental conditions.

13. A method according to Claim 12 wherein said control means is responsive to temperature.

14. A method according to Claim 13 wherein said oncogene is SV40T.

15. A method according to any preceding claim wherein said environment

comprises an extract of cells from a region at, adjacent, or functionally related to the original region from which the first undifferentiated nerve cell is derived.

16. A method according to Claims 1 to 14 wherein said environment comprises a soluble extract taken from a population of cells physiologically located at a region at, adjacent, or functionally related to the region from which the first undifferentiated nerve cell is derived.

17. A method according to any preceding claim wherein said homogeneous population of cells are exposed to at least one growth factor.

18. A method according to any preceding claim which further includes transforming said first undifferentiated nerve cell with a safety feature gene which is either constitutive or can be selectively activated so as to enable, in either case, selective disabling or destruction of said cell-line.

19. Use of a nerve cell-line, which comprises a first undifferentiated nerve cell or nerve cell precursor cell that has been immortalised with an immortalising agent which includes or has associated therewith a control means whereby the immortalising agent can be selectively activated/de-activated, as a model for investigating apotosis whereby following culturing of said immortalised nerve cell so as to provide a homogeneous population of nerve cells prior to confluence said control means can be activated so as to remove the functional effect of the immortalising agent and so bring about cell apotosis.

20. Cell-lines produced in accordance with the method of the Claims 1-18.

21. A nerve cell-line according to Claims 1-18 committed to a fully differentiated phenotype.

22. A non-mitotic nerve cell-line according to Claims 1-18.

23. A nerve cell-line that survives at low densities according to Claims 1-18.